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nevertheless is called female rain." To stop rain or snow, lice are hunted and tied to a rock with sinew; or an individual may draw a charcoal ring around his anus and lift his buttocks to the sky to bring the sun out. Sudden storms are regarded with fear. "If it doesn't look like rain, but then the wind and dust come up suddenly and it starts to rain, it brings news—bad news of death. If someone is very sick and this happens, it means he won't last. I have seen it happen."

Various things are seen in the half or full moon, the most common being walnut or cottonwood trees and a human face. Some persons think that watching the sunrise or sunset colors will cause sickness. Warts are also the penalty for pointing to heavenly bodies with the fingers; only the thumb may be so used.

Pulling out gray hair is said to make it grow faster; it is also held that one who brings water and drinks first himself will grow old quickly. It is forbidden to step over a person who is sitting or lying down: "If someone starts to step over you before he sees you, he has to go back. If he has already stepped over, he has to step back." Because it "may cause a severe pain in the stomach, food which is being cooked is not stirred with a knife." Eating frogs can result, it is thought, in bowlegs. Blood and tobacco are considered incompatible:

> My people don't want any blood around when they smoke. If there is blood on the hands, they will get it off before they smoke. If a person has a knife with blood on it, he cleans it up or puts it away before he smokes. He will have bad luck otherwise.

Much of the cosmology is expressed in terms similar to the beliefs already enumerated. Thus, the pitching of a flour-laden burro explains the Milky Way; an earthquake is the crying of the earth over an approaching epidemic; eclipses, either of the sun or of the moon, warn of epidemics also and necessitate a masked-dancer ceremony to ward off the disaster; a shooting star points to an advancing enemy; of a cloudburst it is said, "The sky is old and has split there; when it is sewed up it will be all right."

Of greater significance than such beliefs is a diagnostic sign, a muscular tremor, which few fail to heed at some time in their lives:

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755 and he tells me that I must follow certain rules. For instance, for a headache I
756 must not put a knife in a cooking pot.[20] If I violate the rule, the disease will come back on me again. Or he may tell me to have the door of my house to the east. If I don't do this, if I violate this rule, the Mountain People will know whether I have done this or not, and the disease will come back to me.

It is up to the sick man to make gifts, anything he wants to give. After the fourth time the sick man is taken back to his own camp. In cases where the feather drops or the abalone drops, after the shaman leaves the man, he will keep on praying until the man gets well anyway.

[535] A Mountain Spirit shaman can also perform his rite without any dancers. If there is a sudden emergency, if the full ceremony would be too costly for his patient, or if he cannot find enough dancers, he uses only the headdresses which the dancers customarily wear, placing them against the body of his patient and gesticulating with them to the directions to send the sickness away.

731 Many ceremonies cure the sickness of individuals, but the pre-
751 vention of epidemics is a signal function of the masked-dancer
535 rite. "When I hear of disease coming, I paint them and tell them
789 to chase the disease away with the sticks," said a Mountain
796 Spirit shaman. "When sickness is around, the masked dancers and the clown are made on a hill and then come to the people below, making fires on the way down. In this way they keep sickness away."

[522] It is at such times that the clown, who merely acts as messen-
[881] ger and funmaker at the girl's puberty rite, may come into his own:

> The old man always told us that the clown was the most powerful of the masked dancers. He said, "People think that the clown is just nothing, that he is just for fun. That is not so. When I make other masked dancers, and they do not set things right or can't find out something, I make that clown and he never fails." Many people who know about these things say that the clown is the most powerful.

At times of danger or epidemic another masked dancer, Black One, is sometimes made:

> There are different grades of masked dancers. There is the clown, and he is dangerous. Then there is Black One, and he is supposed to be very dangerous. Black One wears nothing but feathers on top of his mask. He is painted black.

[252]
[184]

[20] There is a general prohibition against stirring food with a knife.

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MAINTENANCE OF THE HOUSEHOLD

HUNTING

224 462 IN THE securing of sufficient food the preoccupation of the man is properly with the hunt. "They think they are doing enough by going around hunting all day and getting food together." Except for participation in occasional rabbit surrounds, women are not encouraged to show concern for matters pertaining to the hunt. "Women never go out hunting because they aren't strong and able to get around," it was explained; but another comment suggests that the idea of appropriate male and female spheres is quite as important a consideration.

[152] The Chiricahua don't like to see a man go out hunting with a woman, whether they're married or not. It's considered a disgrace. One man used to do this. He was so jealous he didn't like to leave his wife alone. The Whitetail people saw him going out hunting with his wife, and they criticized him and laughed at him.

224 Since the deer is the most important game animal, a hunting trip, unless it is otherwise stated, may be assumed to have as its goal the securing of venison. Whether or not a specific ceremony precedes the hunt, certain precautions are always observed:

224 262 784 There are two things you cannot do before you go hunting. One is to eat onions. The other is to chew osha [*Ligusticum porteri*]. The deer will smell you if you do. Suppose you are going hunting tomorrow morning. You can't eat them tonight then. You can't even dig them the day before you are going out to hunt.

[252] But the Chiricahua eat onions with deer meat when they come back from the hunt. They use the onions raw while they are eating the meat or they boil the onions with the meat.

When you are going hunting you take care not to clean yourself up. Perhaps you have been eating the meat of some animal and therefore have been rubbing the grease and marrow of the long bones on your face, legs, and arms. You keep this on. And you don't put anything else on yourself that may smell; nothing

[302] sweet-smelling like perfume [i.e., "Indian perfume," such as mint] can be used at this time.

224 261 785 Fasting immediately before the hunt aids the chances for success:

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231 to four stout poles which are sunk into the ground. Inside, near the top, are perches on which the eaglets may rest.

An Eastern Chiricahua band leader had three eagles in one house. Then another was built. There were two in there. The little eagles used to go out and come back. They ate lungs. They fought like dogs. When they had had enough to eat, they went to the top. Eagles that are raised are never killed. After they have pulled the feathers off, they let them go.

One other informant recalled having seen eagles in captivity but sharply reduced the size of the cage employed from that pictured in the preceding account. The practice of capturing eaglets alive and raising them must be quite rare, however, for a number of other elderly commentators denied knowledge of it. One man explicitly stated: "We didn't keep eagles in a cage. Many were afraid of them and wouldn't touch them. We couldn't raise [361] them. We were moving all the time, staying three days or so in one place. That's why we stored our goods in cave caches."

226 262 It is possible that some individuals of the Southern Chiricahua band or members of some of its local groups make an attempt to secure fish and eat them:

My people eat fish. There was a certain river in Mexico where my people came. There they would lift rocks in the water and shoot the fish they found [252] there with arrows. When they were traveling they just put the fish on the coals and broiled them. They also used to boil them in water. They ate fish eggs, but they ate no shell fish at all.

Another informant, an Eastern Chiricahua who lived close to the Rio Grande, explained that those with whom he lived fished whenever they could and ate any kind of fish.

262 It may be, therefore, that the dislike of fish reported by many informants is to be correlated with unfamiliarity with this kind of food and the distance from any possible supply. The intensity of the repugnance and the willingness of many to equate the fish with the snake, suggest something stronger than mere unfamili- [177] arity, however. It is more likely that the Southwestern taboo on fish was beginning to influence the Chiricahua markedly and that the alleged similarity between the fish and the snake afforded a convenient rationalization.

In an attempt to explain why his people made so little use of fish a Chiricahua acquaintance said:

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names, in order, are: "Little Eagles," "Many Leaves," "Large Leaves," "Large Fruit," "Earth Is Reddish Brown," and "Ghost Face." "Little Eagles" refers to early spring; "Many Leaves" covers the period of late spring and early summer; "Large Leaves" is midsummer; "Large Fruit" (some call this period "Thick with Fruit") designates the harvest time of late summer and early fall. By late fall the hills assume a color for which the term, "Earth Is Reddish-Brown" seems appropriate. Dread of the lifeless winter is expressed in the name, "Ghost Face." The entire year is called "one harvest." "Ten years ago would be ten harvests ago." Periods of time shorter than the six divisions with descriptive names are reckoned from new moon to new moon. "You say so many days from the beginning of the new moon," or, "So many new moons ago." 821 805

If food is to be gathered near home, the woman takes her large burden basket and works alone or with her daughter or sister. "They have a little jug to carry drinking water in while they are away from camp. Often they stay out all day. They eat any time they care to." When a long journey is necessary, a larger party of women will set out together. "They go in groups of six or so and keep their finds separately." Should the destination be so distant that the group cannot hope to return for some days, men or youths go along to protect them and to assist in the heavy work. 222 [482] [415] [264] [484]

Through most of the winter and until mid-spring the household must depend on stored vegetables saved from the preceding year. But in the spring the narrow-leafed yucca sends up a central stem which is gathered while it is still green, tender, and without blossoms. Lengths of the stalk are placed on a bed of embers and roasted until they are soft. The charred outer surface is peeled, and the stalks are eaten without further preparation. Thicker stalks are sometimes roasted in an underground oven. A hole is dug in the earth (one is described as four feet long and three and a half feet deep) and a fire is kindled in it. Stones are heated by placing them on top of the burning wood, and the oven is lined with them. The woman peels the pieces of stalk, pounds them or cuts them in half, places them on the 252 [251] [262] [221]

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• 252 stones, covers them with dampened grass, and heaps a mound of earth over all. If she does this in the morning, the food will be thoroughly steamed by evening.

[251] After the stalks have been cooked this way, they may be sun-dried and kept for some time, even for a year, in a parfleche. When they are wanted, they are soaked in water to soften them and eaten. Or they may be eaten immediately after they have been baked—often pounded—while they are still soft, with fruit from the broad-leafed yucca or some other fruit. This stalk is not the favorite vegetable, but it becomes important when other food is scarce.

[262] Available at this time also are the white rootstocks and the tender lower portions of the shoots of the tule. These are boiled with meat or made into a soup. "We boil the root with a soup bone as some people do turnips." The root is sometimes dried and stored.

[262] By now the clusters of white flowers of the narrow-leafed yucca are in bloom. These are gathered and boiled with meat or bones. Any surplus is boiled, dried, and stored. The buds of still another variety of yucca (unidentified) are opened and dried.

[251] [263] During the process they must be impaled on sticks "as you dry peaches; you cannot put them on a hide because they would stick to it. . . . . These are used to sweeten drinks." The drinks are various kinds of "tea" to be discussed presently.

[262] Not long after this an important food, the agave, century plant, or, as it is more commonly known, the mescal, is ready. The stalks, before any blossoms appear, are cut and roasted or pit baked like yucca stalks, but much more important as a food is the lower portion or crown. If the women live far from the

[484] place where mescal is plentiful, they make a long trip to obtain it, establish a temporary camp, and prepare it there before returning home. When many crowns are to be baked, a large pit must be dug and many rocks transported to it; therefore, men sometimes accompany the party to assist with this heavy labor.

[462] Whether men are present or not, the women are in charge of the proceedings:

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When the stalks are just coming up and are going to blossom, we go to a place where the mescal is plentiful and dig a pit in about the center of the region in which we are going to get the plants. They are big and heavy, and we don't want to carry them farther than we have to. If men are along, they dig the pit while the women start bringing in the plants. There has to be plenty of wood too and some big flat rocks. If the plants are scattered and a long way from the pit, the woman uses a horse to carry them in.

[412]

The woman has an oak stick about three feet long, sharpened at the end like a chisel. She drives this at the lower part [at the stem below the crown], pounding it with a rock, and it [the crown] rolls out. Then she turns the plant over and cuts off the outside leaves with a broad stone knife. Enough of the outside is cut off to expose the white underpart. Then she brings it to the pit.

The pit is round, seven feet or more across and three or four feet deep. This hole is lined evenly with rocks. Then a big pile of wood is brought. This is put into the hole in criss-cross layers, first a layer one way and then a second layer the other. It is built up like this until the pit is just about full. Then more rocks are put on top of this wood. Fire is touched to it—from the east side first, then from the south, then from the west, and from the north. Then the woman who did this prays. They let the wood burn to ashes. Then they put the mescal in. Each woman will leave a leaf on her mescal heads in a certain place so that she can tell her own. Wet grass goes on top of the mescal, then dirt until no more steam comes out.

The smaller mescal they put in during the late afternoon and let them go all night. Sometimes they are ready the next day. To make sure, they take one out, and, if it is not ready, they put it back and let them all go for a while. How long it takes depends mostly on the size. The ones which grow to the south are larger. The largest ones take four days. Usually they take about two days.[9]

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"The botton part of the mescal, the part that is put in the oven, has to be eaten at once unless it is to be dried and preserved. It will spoil if it is not dried." Therefore, the leaves, called "wings," are peeled off and put in the sun to dry, and the softer centers are pounded into thin sheets and spread out in the sun. Juice, drained from pounded mescal suspended over a receptacle, is poured on the dried mescal sheets and forms a preservative glaze.

When the mescal is sufficiently dry and cool to transport, the homeward journey begins. Sometimes the "heads" are carried,

[9] One informant, a Central Chiricahua, told of a method of baking mescal without digging a pit. According to him, rocks are heated and scattered on the level ground, the mescal crowns are put on them, and fresh grass and dirt are piled over all. This "oven" has the appearance of a mound.

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Sometimes the "heads" are carried, on horses, in loosely woven, traylike containers made of yucca, and the sun-drying is done at home. Most of the mescal is stored in the sun-dried, caked state. When a part of a dried crown is to be eaten, it is soaked in water until it softens. It may be mixed with juniper or sumac berries, piñon nuts, or walnuts for variety. The leaves have a pithy, inedible center, but the inner surface of each has a soft layer that is chewed or scraped.

Ordinarily, the woman goes out several times to gather mescal, for she must have enough for general use and for storage. Since each operation—the trip to the place where the plants grow, the roasting and drying, and the return journey—requires several days, this is a busy period. By the time the mescal stalks have flowered and the plants are unfit for use, summer is at hand, and other foodstuffs have made their appearance.

In early summer the locust tree is in flower. The woman picks the blossoms and boils them with meat or other foods, or she boils them in water, dries them in the sun, and puts them away. Then, when she wishes to use them, "she can cook them over again." The first of a number of varieties of wild onion is ready, too. Onions are eaten raw or boiled with other vegetables and meat. Later at least two other kinds are gathered. In the early part of the growing season, too, especially when other food is scarce, the woman strips off the bark from the Western yellow pine, scrapes its inner surface, and heaps together the soft, sweet material.

Though most of the sumac berries are not ripe until late summer and fall, one variety is ready now: "It [*Rhus microcarpa*] has a small red berry which is picked and brought back. The berries are spread out, and the good ones are picked out, washed, and put in the sunshine to dry. After being ground, they are mixed with mescal, and the mixture does not spoil."

From midsummer on, in certain localities, the berries of the one-seeded juniper ripen:

> They have a reddish tinge when they are ripe and fall to the ground. The women pick them up and put them in sacks or burden baskets they bring with them. When they are very ripe, they can be eaten raw, or, if they are still very hard, they can be boiled just enough to make them soft. Another way to use

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them is to boil them until they are quite soft and then mash them with the hands to get the seeds out. What is left is boiled down until just a thick juice is left. This is used more for health than food, although it is considered a regular food. It has a laxative effect, and we eat it as the white man eats prunes. It has a pleasant taste; you can eat a great deal of it, and it won't do you any harm.

In midsummer, too, the first of the edible seed-bearing plants are ready. The woman gathers the seeds by running her hand through the tops and dropping the seeds in a hide receptacle. Threshing is accomplished by working the seeds around manually in the sack. To winnow them, the seeds are poured from a tray basket to an outstretched hide below. The seeds are boiled and eaten or ground on the metate with the mano and reduced to flour from which bread is made.

Now such fruits as raspberries, strawberries, and the earliest of the wild grapes can be gathered. All these are eaten fresh. Grapes are sometimes dried and preserved, and raspberries may be crushed, dried, and kept in caked form.

In the mountains in late summer the woman finds such varied fruits and plants as the chokecherry, the mulberry, a species of potato (*Solanum jamesii*, Torr.), and wood sorrel. Chokecherries are eaten raw when they are very ripe and not infrequently are dried, ground, and stored. Dried chokecherries are soaked in water and eaten without further preparation. Potatoes are boiled and eaten soon after they are gathered or are dried, stored, and ground into flour for making bread. Mulberries are served fresh or caked and preserved. Wood sorrel is eaten raw or cooked with other greens. Another potato-like food (*Ipomoea lacunosa*) is available at about the same time. "It is like a potato in taste. It's white and looks like an onion, but it doesn't taste anything like an onion. It's about half the size of an onion. These are eaten raw. You can keep them for a couple of weeks."

During the same period, in the lowlands, such plants as the nipple cactus and the pitahaya yield their fruit. Of the latter, the more important of the two, this description is given:

This cactus is like the giant cactus, but smaller. It grows in Old Mexico. The plant is taller than a man. The fruit is as large as a man's fist. When the pod opens, it is ready to be picked. It is ready about the middle of August. The

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222 262 252 [251]

fruit is red and is eaten raw. The fruit is dried near the place where it is picked and after it is dried it is piled into burden baskets and brought home. Some of it is eaten fresh, but most of it is dried in the sun, caked, and stored. It never gets really dry; it is always sweet and sticky. Sometimes the fruit drops to the ground, and there are many ants in it when you pick it up.

At lower elevations the yellow fruits of the screw bean or tornillo are one of the first of the fall foods to mature. These sweet pods are eaten raw or are washed, dried, and ground into flour for making bread.

For those groups whose territory extends well to the south, the fruit of the giant cactus is available at approximately this time:

We eat the fruit raw when it is ripe. The women take a long reed stem or a pole and pick the fruit off with it, for it grows high on the plant. They cake some of it as they do mescal and yucca fruit. It never gets real dry; it is always sweet and sticky. It is ripe about the last of August and in September. When you eat it, you eat the seeds and all. The seeds are small, like those of figs.

Between the ripening of other foods, the last of the sumac berries are picked. No sooner are these stored than the broad-leafed yucca or datil fruit is ready:

262 251 252 222

When the Chiricahua are in the hills, they prepare yucca fruit for winter food. They gather it in the fall, in the latter part of September here [at Mescalero, New Mexico]. It is a pinkish color on the outside when it is ripe. It is good to eat raw when it is ripe. When it is very ripe, it doesn't have to be roasted. It is just cut open, the seeds are taken out, and it is spread out in the sun to dry. It will keep all winter then.

But most of the fruit is picked before it is quite ripe. The women gather a large amount. They roast it on the coals. When the fruits are black on top, they are taken off, and the burned outside is peeled off. They are split in two, and the seeds are taken out. The fruit is then put on a hide and pounded. Then they put it over a container in a basket and let the juice run down. They can drink this juice or pour it over the fruit again. It makes the yucca fruit soft and sticky. After that they spread the whole mass out to dry in the sun. If rain comes, they have to cover it up. It gets dry in the sun in two days. While it is drying, they take sunflower blossoms and put them on to make it pretty. They pray while they do it.

When it is dry, this fruit can be stored. It will keep like a cracker. During the fall the women put piles of it away for emergency or for the winter. When it is wanted, it is made ready for use by soaking and is then used alone or mixed with other things.

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In the mountains at this season are gathered the sweet red berries of the algerita. When these are cooked a little, they soften to the consistency of a jelly. A portion of algerita berries is dried and kept for winter use. Currants are picked whenever the women, in foraging, come upon them. Hawthorne fruits are utilized when they are found in abundance, but the dependence upon them is slight. The berries of the alligator juniper ripen in the fall and are at once added to the household stores.

Ready at this time also is the fruit of the prickly-pear cactus:

When the fruit is ripe, while it is still on the plant, it is first cleaned of spines with a brush of stiff grass. It is then picked off with tongs of wood made by bending a branch on itself. While it is still held in these tongs, it is again brushed with the grass. Then the woman puts the fruit in her burden basket, and when she has many of them she takes them home. The fruit can be eaten fresh, or it can be dried and saved. It must be preserved by drying or eaten at once.

To dry the fruits, she splits them, takes the seeds out, and leaves them in the sun. They dry quickly if the sun is strong, but during rainy weather it takes a long time. After the seeds are removed, the pulp is mashed sometimes, and the juice that runs from it is put over the fruit again. It is kept in this caked form, for the layer of juice acts to preserve it. If it is thoroughly sun dried, when it is wanted for use, it is usually boiled. Sometimes soaking it in water without boiling will soften it enough for eating.

Sometimes the fruit is mashed, the pulp is thrown away, and the juice is kept for a drink. It is drunk while it is fresh and is considered healthful.

The mesquite beans are now large and ripe in the lowlands. These beans are used in a number of ways. The woman grinds them to flour on the metate and from this flour makes what can best be described as a pancake. Or she prepares a kind of sweet, thick gruel by boiling the beans and working the softened mass with her hands. She also cooks the whole beans with meat; then the seed coats are spit out when the food is eaten.

Walnuts, one of the important products, are sought at this time:

The Chiricahua use wild walnuts. They carry them around in a parfleche. When they want to eat them fresh, they just pick up those that have fallen on the ground. If the nuts have been there for a while and are dry, they just crack them and eat them. If there are many of them, they save some. In the winter they sit and crack nuts and give them to their children.

But if they want to mix them with other things, like mesquite beans, they do

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262 it differently. Then they gather them green, and each woman cuts a long stick,
• 252 six or seven feet long, just heavy enough so that a person can sit there all day long hitting the nuts and hulling them. One woman will be sitting with hers spread out on the ground before her; another will be a little distance away. They [251] have to do this near water, near a creek, and wash them. Next they spread them out to dry for many days when the weather is good.

Then in wintertime they use the nuts with mesquite beans or mescal. They sit there and pound the nuts with a stone, shell and all, just as fine as possible. The mesquite beans are boiled and strained. For a strainer they use sticks that cross or a branch that has many twigs. This catches nearly all the coarse material. Then they put the nuts in but do not boil the mixture any more. It is ready to eat then.

[881] When this is finished, you can dip in there with your bowl and hold it to your mouth and drink it like soup. This food is used nearly always at the girl's puberty rite.

[276] It's just the opposite from chewing tobacco. When you chew tobacco, you spit out the juice and leave in the coarse stuff; when you eat this, you swallow the juice and spit out the coarse stuff.

[184] An Eastern Chiricahua added to the above that his people boil the meats of walnuts as well.

222 The nuts of the Western yellow pine are not large enough to
262 gain much attention: "We don't pick them much; just a few now and then." Of much more importance are the seeds of the [252] piñon pine. "When the outside shell is still green, the women pick many of them, heat them, and then, when they are shaken or stroked, the little nuts come out: Some ripen on the trees by themselves, open, and the nuts fall to the ground. The women pick these up too."

252 The women parch the piñon nuts for a few minutes until "they
262 get a little darker; then they will keep." There are a number of [251] ways of utilizing the seeds. They may be cracked with a stone and the meats eaten alone, or the meats, when a sufficient quantity of them is shelled, "are mixed with yucca fruit which has been baked on coals; it makes good eating." As in the preparation of walnuts, the seeds, shell and all, may be ground fine on the metate and mixed with other foods. Mesquite beans, mescal, yucca fruit, and sumac berries have been mentioned as other foods with which they are combined.

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The acorns of both the Gambel oak and the live oak are valuable foods, for the acorn is used in a kind of pemmican:

In the autumn the women wait until the acorns are ripe and fall to the ground. Then they gather many of them and bring them in. Some people leave them in sacks just as they are when gathered and later crack the shells with their teeth and eat the nuts.

But some roast the nuts a little, crack them, and put them out in the sun to dry. Then they use the nuts with the dry [jerked] deer meat and some fat. First they pound the dry meat on a rock and mix it with a little fat. Then they take the acorn meats and pound them up fine. After that they mix the meat and the acorns together. They shape it like meat balls, and these keep all winter. If they are camping in any place, they can have it for any meal. When it is made this way it is all ready to eat at any time. You eat it just as it is. Because it is all prepared, it is a good thing to take on a journey. When a big group is on a journey and a child is hungry, they give it some of this.

During the summer and fall the women gather various greens for flavoring stews and soups. Lamb's quarter is one of these. It is cooked with meat or bones, chili, and onions. Locust pods, the white seeds of the anglepod, the seeds of the unicorn plant, and still other varieties of wild potatoes and onions are procured at this time.

A number of grasses and other plants (among them dropseed grass, tumbleweed, pigweed, spurge, and sunflower) are harvested for their seeds. Most of these are hand threshed as previously described, or a large amount of the seed-bearing tops is cut, put on a hide, dried, and beaten with a stick. The largest stems and leaves are picked out by hand, and the remainder winnowed "by letting them fall to a hide from a tray basket." The same end may be attained by "tossing the seeds in a hide; then the leaves are blown away."

To obtain sunflower seeds in quantity, the woman fills her burden basket with the flowers and later lays them out to dry at home. When the plants are thoroughly dried, the seeds can easily be shaken out. Or, if the seeds are very ripe, the back of the sunflower head is shaken or is given a sharp blow with a stick, and the seeds fall into a burden basket which has been placed under the plant. These seeds are ground up and are added

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222 252 262 [251] to meat dishes to form a gravy, or they are made into flour for bread baked in hot ashes. Sunflower seeds and other seeds are often placed with hot coals in a tray basket and "worked around" until they are parched.

824 [221] In the fall when the tule is yellow with pollen, the tops of the plants are cut off, brought to camp, and dried. Then the dry tops are shaken or struck over an outspread buckskin. Pollen is gathered, without special ceremony, from other plants and from trees by shaking them after placing a piece of well-tanned, uncolored [239] buckskin to catch it. Buckskin is always the proper receptacle. It is said that "pollen would go through cloth," but more important is the feeling that "it would be wrong" to use anything but buckskin for pollen bags and containers.

222 462 [221] From early spring to the onset of winter, the woman gathers fruits and vegetables which grow at different elevations and in different areas. She does not keep at this task steadily, for she has many other duties. But she must be ready at the report of a good natural harvest to leave at once for the region where it is. 222 Often it is near by; but many times the site is so far distant, and 484 the work ahead so time-consuming, that the entire household 592 goes with her and sets up a temporary camp. Using this as a 621 base, the husband hunts while his wife gathers the wild crop that [596] has drawn them there. Not infrequently more than one household or an extended family consisting of a number of households temporarily leaves the larger encampment or local group on such an errand. Thus, in order that the woman may obtain the various foods in the order in which they mature, the household remains a mobile unit, ready to detach itself from the local group at short notice and to rejoin this group or another just as easily.

222 While the women are foraging, they are on the lookout for beehives:

[824] Honey is found in the stalks of mescal, sotol, and the narrow-leafed yucca. The bee deposits the honey in the stalk. The bee which does this is a big yellow one. The women search for honey in these stalks. They gather it in the fall. They split the stalk to find it. It's like candy. I used to be great for honey!

Honey is also obtained from a large yellow bee that nests in the ground. To secure this store, the device of allowing the bees to

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emerge one by one and killing them as they come out is employed. A ceremonial touch is given the unearthing of these ground hives. "When the Chiricahua come upon one of these nests, they mark a big circle and say, 'May you be as big as this.' Then they open it up." 222

When hives are discovered in trees or in logs, a smudge fire is used to smoke the bees out. The co-operation of a man skilled in the use of the sling is required when hives are found among the rocks in cliffs. "He throws at it with a sling and brings it down. The bees leave the hive. Then the people go and get the honey. We put honey in drinks and eat it with bread." The bees which nest in the cliffs and bluffs are described as smaller and darker in color than the others. Sometimes a hive is wrapped in a hide and brought home before it is opened. [411] [262] [272]

THE COOKING AND PRESERVATION OF MEAT PRODUCTS

The woman is not only responsible for the preparation and storage of the food which she herself collects but is expected to take charge of the meat which the man contributes to the household: 462 252

A man hunts and butchers the game. He brings it in to the woman. After that it's her job to take care of it.

I never heard of a man cooking when his wife was around in the old days. He doesn't now either. Getting water is a woman's job too. I don't see any men doing it even now. The same is true of getting and cutting wood. The men sit around and smoke and tell stories when they are at home. [312] [313]

Certain parts of an animal are seldom eaten. Ritual restrictions placed upon individual members of the household must be kept in mind too: 262

Some people ate pancreas a long time ago, I believe. I'm not sure. Now they don't do it. Some shaman started telling people not to eat this and that, and now they can hardly eat anything from the inside, it seems.

The Chiricahua does not like to eat any meat from the head.

It is dangerous to eat the heart. As a general rule the Chiricahua do not eat the heart of an animal. I think to myself, "Well, I don't know what there is to it, but I won't do it because it looks dangerous." My wife won't do it either.

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262 Ceremonial considerations, too, govern the consumption of eggs, particularly for women:

[842] We always ate eggs. Some women won't eat eggs for fear of getting children, however. But this is according to the shaman's directions. We eat the eggs of the quail and duck.

252 262 Those who do eat eggs prefer them boiled or roasted in hot ashes:

Some people eat the eggs of the quail, the duck, and other birds. A good many quail eggs are found together. The eggs are boiled, or a fire is made, the ashes are pushed aside, the eggs are put in there, and the ashes are put back over them.

Most meat is prepared by broiling over an open fire or by boiling, though some of it is pit baked. In the common broiling processes the meat is suspended over the coals with a stick held in the hand, or it is placed on top of the hot coals and turned at intervals. Sometimes it is cooked by placing it on a flat rock which borders a hot fire, while another rock, lying perpendicular to the first, holds in the heat. The most choice portion of meat is the fat part "on top of the ribs" next to the skin.

The favorite method of cooking wood rats, rabbits, and prairie dogs is to bury them in hot ashes before skinning them, and then to skin and eviscerate them when they are well roasted. But one informant, in describing how rabbits may be cooked, said: "Throw the whole rabbit on the coals. When it is partly cooked, take it off, skin it, take out the insides, and put it back on the coals to finish." Rats are sometimes skinned and cleaned before being roasted in hot coals. Wood rats and rabbits are also boiled, but this is a less popular mode of preparation.

Mountain lion or peccary meat, when it is prepared for those who will eat it, is roasted or boiled in the same manner as deer, antelope, or elk meat.

For those who have no aversion to eating any part of the head, it is cooked in a heap of hot coals or is steam baked in a small pit: "My people put the deer head in the fire, cover it with ashes, [825] and let it cook. They break the eyes first. That is their way. It [999] is done for good luck." The pit-baking method resembles the way in which mescal is prepared:

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When the head is used for food, one way to fix it is to dig a hole, line it with rocks, and build a fire in there. It makes lots of ashes. Put the head in on top of the ashes and grass on top of the head. Sprinkle the grass with water and cover with dirt. Let it roast a day or a night. Usually the tongue is taken out first. 252 • 262

Sometimes the feet, liver, and entrails are placed in the earth oven with the head and are cooked with it for a day or a night.

The pit is used, too, for cooking fetal deer and antelopes, which are considered a delicacy. "The unborn of deer and antelopes are good eating. The meat is soft and has a good taste. We don't steam grown animals in an underground oven. But we do do it to a deer not yet born. This can also be prepared like any other meat, however."

Although the intestines are not so well liked as other parts, the hunter usually brings them home:

The intestines are much better if the animal is fat. We don't care much for the intestines anyway if we have plenty of other meat. If the hunter is loaded up on returning from the hunt, he does not bother with the intestines, especially if the animal is not fat. When he brings the intestines home, the hunter turns them over with the other meat to the woman who is going to cook it. She takes the outside off, working downward and squeezing out any waste left as she does so. Then she cooks them without washing them. Now the young people turn them [178] inside out and wash them.

Intestines are cooked over the coals. Another good way to cook them is to stuff a piece with meat and fat. The woman puts sticks through each end so the filling won't come out. Then she puts it on a hot stone by the fire to cook. The windpipe of an animal is stuffed in this same way too. But the intestine is used just in an emergency when food is scarce. Now when we kill a sheep we throw away the intestines. We save only the liver and sometimes the heart from the inside.

Liver is usually thrown on the coals of an open fire and roasted. Sometimes a sort of "blood sausage" is made. The hunter fills the paunch with the blood of the animal he has killed and brings it home. Then the woman "adds fat and onions and puts it in the coals or in a pot, cooking it until the blood gets thick and tastes like liver. She punctures the stomach so it won't explode. She puts in some of the little red chili peppers that grow [263] in the mountains of Old Mexico. These are small, like marbles." When it is not used in this way, the stomach is seldom eaten:

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252 262 "The stomach isn't often eaten. Now when we butcher a cow, the stomach is thrown away."

Birds that are considered edible are most often boiled. Turkeys are eviscerated, plucked, and then boiled, for instance.

251 [462] It is the woman's task, also, to preserve any surplus meat by "jerking" it:

> She takes the thick parts, cuts them thin, and hangs them up to dry in the sun. To use the meat after it is dried, she pounds it up with a stone. It can be mixed with fat then and eaten like this without being cooked. Or even without the fat it is used on the march and in emergencies. When the people are in no hurry, this pounded meat can be added to soup, boiled in water, or fried. It will soften when boiled in water. This dried meat, in strips or in pounded form, can be kept in caches or carried in sacks. Jerked meat, when the people are camping in one place for a time, is laid over the higher limbs of a near-by tree.

THE PREPARATION OF BEVERAGES

273 462 [272] The preparation of beverages, both alcoholic and nonalcoholic, is classified with cooking and is, therefore, the task of the woman. Of tiswin-making it was said: "A man would never [558] make tiswin. It would lower his standing. One man used to [156] make it, but he was a roughneck, and didn't care about his standing. He lowered himself many times."

272 The juice of the prickly pear is occasionally drunk, but "for health" rather than for quenching thirst. Drinks which are compared to commercial coffee and tea are described:

> In those days when coffee was scarce, some people used the bark of different trees, such as oak [Gambel oak] to make a drink. Some used a plant for tea. It is [824] better than the tea you buy. The English name for it is lip fern. It grows all around here. There is another plant [cota] that is used for tea too. To make it, some is just broken into convenient pieces, put in a pot, boiled, and the water drained off. It is about the same color as store tea and tastes much the same.

273 [824] Alcoholic beverages are made from mescal, sotol, mesquite, and, more recently, from maize and wheat. Tiswin, the maize drink, is the only one of these beverages which is made or consumed in appreciable quantities. [554] The people have become very fond of this mild beer, and the services and company of a woman who can make it well are in constant demand.

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THE STORAGE OF FOOD AND SURPLUS POSSESSIONS

Only a limited amount of preserved food can be carried in parfleches and sacks. The rest must be cached. "In those days we had no place to store things when the women had dried a great deal of yucca fruit, mescal, and berries. So we took this food to a hole in the rocks, to a little cave."

These caches are in rocky caves. I've never known them to make one in the ground. This is their secret supply. They can roam around away from this place and come back toward it when they are hungry. Then they get out just so much. They often have valuables in there—extra baskets and other things. An individual household might have its own cache, or several camps of related people might put their goods in together.

This is the way it is fixed on the inside. First a layer of rocks is put down. Then a great deal of oak brush is laid on the rocks. The parfleches are laid on this. Inside each parfleche are layers of food, layers of mescal or yucca fruit, each layer separated from the others by grass. Sticks are placed between the parfleches. The entrance is closed up with rocks and then plastered with mud so the room is sealed and airtight. Then they fix the place over with grass and dirt. You can hardly tell it from the solid mountainside. Food will keep it there for a year or so.

Perhaps they are camping a long way from that cache and they run low on food. They can send a man after some of the provisions then. He closes up the entrance again just as though nobody had ever been there.

Food is not considered an individual or personal possession. The successful hunter sends his wife to her parents with the game he has procured, or a large share of it. Most often the women of the extended family prepare the food from combined stores and hide any surplus in one cave cache.

The disposition of the stored food after the death of the woman who was responsible, in whole or in part, for gathering and preparing it, is a clue to the concept of joint ownership. One of the most solemnly respected death customs is the destruction of all objects which belonged to the deceased or were intimately associated with him. But:

If a woman has some food stored up like that and she dies before she uses it, many times it is used afterward. It is not considered her personal property.

The cached food belongs to the relatives as well as to the one who puts it away, but only to the family and the relatives of the woman. If the family is

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In discussing the various pollens used ritually, an informant included corn pollen and remarked. "You can get some pollen from corn; they used some of this a long time ago." 824 988

As in the case of other food products, it is the woman's task to cook and preserve the corn: 251 [462]

They would build a big fire and bring in load after load of the corn in sacks. Three or four women would work together. They would sit there and shuck corn and put it in the fire and let it get brown on top. Then they would throw it to a place where another woman sat. She would take the ears, cut off the kernels, put them on a clean hide, and throw away the cobs. Then they spread it out in the sun to dry. They would leave the corn out there for a week or two until it was very dry. They can carry that corn around then, and it won't spoil. It will keep for a year. They don't have to keep it in a cool place either. They store it in parfleches and use it in winter.

In the winter when the snow gets to be two or three feet deep, a man goes out and kills game and brings it in. Then they can use the dry corn with meat and bones, letting it boil together for three or four hours. It surely makes a good stew! We're using it right now, for we stored up last summer's corn. This dried corn is used at almost every puberty rite now too. [252]

The dried kernels are also roasted or parched: 252

I saw my people cook corn in a shallow basket many times. They put several pounds of corn in the basket with some hot coals and keep working it around. The corn kernels split, and then they take them out and fill it up again.

Another corn dish reflects the influence of Mexican townspeople: [177]

The Chiricahua never boiled the corn in the husks. They stripped off the husks. They cut off the corn kernels and piled them up. They ground the corn on a rock, using a big stone in the hand [mano and metate]. In those days flour was hard to get, and they made bread out of the ground corn. They used the corn husks to make a sort of tamale. They put some corn meal in a cornhusk and wrapped it up, tying it with a thin strip of cornhusk. Then they put it in water to boil with meat and bones. If they had chili, they put it in with the corn meal. [412]

In season the corn is eaten fresh:

When they had the green corn, they cut the end off after husking it, broke it in two, and put it on to boil with bones or meat. In summer when the corn was ripe, they went out and brought in lots of it.

HOME INDUSTRIES OF WOMEN

In addition to her other tasks, the woman must furnish those things essential to the proper running of the household: 462

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are too heavy to carry along. But we take the mano which is ready made and carry it along often. Then the woman uses it on a flat rock or one with a shallow depression.

Some metates are fashioned by the women for themselves, however:

[324]

These metates are about two feet long and one foot wide. They have a little depression which the woman makes by pecking it out with another stone and then rubbing it smooth. A woman has just one grinder on which she grinds the same food several times if she wants to make it finer.

Some women carry these all the time. It all depends on how often we move and how far we are going. The mano used with this grindstone is about six or eight inches long, just long enough so that a woman can work with two hands. Chiricahua women kneel when grinding. We have no grinding songs.

[516] [252] [533]

A pounder of animal bone, or one of a stone selected because its shape conveniently fits the hand, is another utensil with which the woman equips herself.

[237]

Housebuilding.—The woman not only makes the furnishings of the home but is responsible for the construction, maintenance, and repair of the dwelling itself and for the arrangement of everything in it. She provides the grass and brush beds and replaces them when they become too old and dry. With a stiff grass broom or with a leafy branch, she sweeps out the interior if that is necessary. However, formerly "they had no permanent homes, so they didn't bother with cleaning."

462 356

The dome-shaped dwelling or wickiup, the usual house type for all the Chiricahua bands, has already been described.[13] But a "peaked" home of brush, roughly resembling a conical Plains tepee in shape is also made. Said a Central Chiricahua informant:

342 [184]

Both the tepee and the oval-shaped house were used when I was a boy. The oval hut was covered with hide and was the best house. The more well-to-do had this kind. The tepee type was just made of brush. It had a place for a fire in the center. It was just thrown together.

Both types were common even before my time. For the girl's puberty rite the tepee type was used. Ten or more poles are used in the tepee. The number depends on the person who makes it. It is woman's work to do it, though sometimes the men would help a little.

[881] [346] [462]

[13] See pp. 22–23.

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534 For musical instruments these Apache used the drum, the animal-hoof rattle, the musical bow, the flageolet, and a curious one-stringed fiddle made from the flowering stalk [276] of sotol which may be of Spanish origin. In their peyote rite [796] the Mescaleros accompanied their songs with the gourd rattle.

411 In addition to the shield and the bow and arrow, which have already been mentioned, the Mescalero and Chiricahua fought with spears, slings, flint knives, and war clubs of a number of types. Quivers, bow covers, and wrist-guards were other material items belonging to the war complex.

433 That these people made cradle-boards, fire drills, parfleches, skin tipis, and cloths and blankets of buckskin and animal hides has already been indicated. Water transportation 501 was solved by the construction of a crude bull-boat or raft-like structure.

SOCIAL ORGANIZATION

596 The tribe, band, and local group have already been described. The remaining social segment is the extended domestic family, which acted as the basic economic unit. Such an extended family would be housed in a cluster of individual dwellings and would ideally consist in an older married couple, their unmarried children, their married daughters, [591] the sons-in-law, and the issue of these. As can be inferred from this, residence was matrilocal. All the cooking [252] for the members of this family group was carried on at one place by the mother and her daughters, and the latter sub- [606] sequently took portions of the prepared food to their husbands and children, for a mother-in-law—son-in-law avoid- [476] ance was in effect. Whenever there was work to be done which involved the labor of more than one person, the men or women of this extended family, according to the nature of the task, assisted each other in its execution.

584 Marriage was arranged between the older kin of the man and woman involved, usually at the instigation of the young man, who, with the approval of his own relatives,

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Agriculture has never exerted influence enough to figure in Chiricahua or Mescalero Apache ritual, belief or myth except in one instance, where there is an association between the growing crop and the cricket. Crickets are placed around the field and prayers are addressed to them to help the crops grow. The Mescalero put a live cricket with the seed to be planted and take care not to kill a cricket lest their crops be reduced.

Informants reported that their maize was blue and red mixed and that they never had either pure yellow or pure blue varieties. Samples of maize grown at present on the Mescalero reservation are mixed blue and white. Also in an old parfleche purchased from a Mescalero Indian were found dried maize kernels which were represented by informants as the type grown formerly by the Mescalero. Mr. Volney Jones, of the Ethnobiological Laboratory of the University of Michigan, reporting by correspondence upon these grains said: "It is of a type which is grown by some of the Pueblo Indians but is very much smaller. The type is intermediate between flint and dent, having the flinty or hard consistency of flint corn but the grain shape of dent corn with only a slight tendency to dent."

Maize was usually cooked like mescal, in an underground oven, by the Mescalero. Wood was first burned to hot ashes in the pit, then the whole ears were sprinkled with water and thrown in. They were next covered with grass and dirt and cooked over night, after which they were removed and stored, husk and all, and did not mould. When desired for a meal the ears were boiled and were said to taste like fresh maize.

Another method of preparation was to roast the ears as described above, cut off the grains, and dry them, and store them in sacks until ready for use. The Chiricahua informants claimed that they did not roast maize in underground ovens although they saw the Navahos do it.

Maize was also dried on the cob. All except two husks were removed. Then it was dried in the sun by tying these two husks together and hanging the ears up on strings or on trees.

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PLANTS USED BY THE MESCALERO AND CHIRICAHUA APACHE FOR FOOD, DRINK, AND NARCOTICS

Foods

The stately Agave, a characteristic feature of desert vegetation of southwestern United States, constituted a very important source of vegetal food for these Apache. Several native species were utilized, but the most abundant one in the area was *Agave parryi*, commonly known as mescal or century plant (although these common names apply equally well to several other species). Contrary to popular opinion, the Agave bloom in much less than one hundred years; however, each plant blooms only once, after which the leaves wither and die. Around the dead plants are usually to be seen a number of young plants formed from suckers of the parent plant. It is from the food itself, known as mescal, prepared from *Agave parryi*, that the Mescalero Apache have been given their name *(28:*455).

Although not so extensively as formerly the Apache women still make expeditions to regions where Agave grows in abundance for the purpose of collecting the edible portions of the plant. These visits are usually made in late May or early June when the reddish flower stalks begin to appear and the plants are most palatable. Plants not blooming are known as "man" plants; those bearing a flower stalk are designated as "woman," and the Indians advise against using the "man" plants for food since they are bitter and spoil all mescal with which they are baked. This is because the "man" is smoking and the smoke permeates all the mescal in the pit. The "man" changes into "woman" when it flowers, then dries up and is gone.

The crowns of the mescal plants are dug out with three-foot sticks cut from oak branches *(Quercus* sp.) and flattened at the end. This end, when pounded with a rock into the stem of the plant just below the crown, permits the crown to be removed readily. A broad stone knife is used

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252 [412] to chop off the leaves, two being left for tying the crowns together, thus making transportation more convenient. The naked crowns are bulbous, white in color, and from one to two feet in circumference.

Pits in which the crowns are baked are about ten to twelve feet in diameter and three or four feet deep, lined with large flat rocks. On the largest rock, which is placed in the center, a cross is made with black ashes. Rocks are piled on the flat stones, but care is always taken that the 252 top shall be level. Upon this, oak *(Quercus* sp.) and juniper 824 wood *(Juniperus* sp.) are placed. Before the sun comes up this is set on fire and by noon the fire has died down.

On these hot stones is laid moist grass, such as bunch-grass *(Sporobolus airoides)*, side-oats grama *(Bouteloua curtipendula)*, Texan crab-grass *(Schedonardus paniculatus)*, big blue-stem *(Andropogon furcatus)*, mesquite grass *(Muhlenbergia wrightii)*, marsh foxtail *(Alopecurus aristulatus)*, *Muhlenbergia neomexicana*, or the leaves of bear grass *(Nolina microcarpa)*, but bear grass is usually preferred since it does not burn readily. The largest mescal [788] crown is selected and a cross made on it with tule or cat-tail pollen *(Typha latifolia)*, when this is available, the pollen always being placed on the crown from East to West and 252 from North to South. The Indians then pray. Holding the [782] large crown toward the opening of the pit four times, they toss it in and throw the other crowns in after it. Next they have the youngest child present stand at the east of the pit and throw four stones into it. It should be made clear that this little ceremony held at the time of baking varies among different family groups and the above description should be regarded as one of a type rather than a fixed performance. After the mescal has been covered with the long leaves of bear grass and the whole with earth to a depth sufficient to prevent steam from escaping, the crowns are allowed to bake the rest of the day and all night. Early in the morning the [27] pit is opened and a crown examined and eaten. The pit is [784] again closed and the Indians refrain from drinking until [821] noon of this day so as to prevent rain.

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noon of this day so as to prevent rain. The following morning all the mescal is removed.

While the mescal is roasting the women are supposed to stay away from their husbands, and if it is not completely roasted when removed from the pit the Indians believe the women have disobeyed; also that the men should have known better. This is somewhat similar to the view held by the Pima regarding the roasting of mescal, for when the crowns were not cooked thoroughly the difficulty was attributed to the incontinence of some of the members of the party (*25*:70; *4*:11).

The pulpy centers of the black, roasted crowns are released from their charred leaf bases and pounded vigorously into thin sheets on a rock. This brown, juicy pulp is spread out to dry on "mescal cradles," very loosely woven shallow or tray baskets made from the leaves of *Yucca elata*, and in these the prepared mescal is carried home. Unfermented mescal juice is often sprinkled over mescal when being dried. This gives it a glaze which aids in preserving it. It may be eaten as soon as baked or dried and stored for future use in hide containers (parfleches). When wanted, the desired amount is cut off, soaked in water, and when softened the water is squeezed out and the mass eaten without further preparation. A piece of crown is cut off and chewed and the inner side of the leaves chewed and scraped, much as we eat globe artichokes. When the pithy center of the leaf is reached it is discarded. Mescal is sweet, having an agreeable taste somewhat like molasses, and a mild laxative effect.

Many are the combinations in which mescal is used. After the dried product has been softened by soaking it is kneaded together with ground piñon seeds or walnuts (at present peanuts may be used) until the whole is of a doughy consistency; it is then ready for consumption. Mescal mixed with juniper berries (*Juniperus scopulorum*) is another favorite food, while the fruits of the three-leaved sumac (*Rhus trilobata*) are also ground with mescal and the mixture dried and stored for future use. Marcy (*13*:201),

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252 writing of Apaches in the vicinity of the Guadalupe mountains, made the following comment in the year 1849 concerning the preparation of mescal: "... we have this evening for the first time seen the Maguey plant which constitutes almost the only vegetable food that the Apaches and southern Comanches get for a great portion of the year. They prepare it by boiling it until it is soft, then mash it into a paste, and I am told that in this form it makes a very palatable, nutritious food." In view of the fact that no record has been encountered elsewhere of mescal having been prepared by boiling, and present day Indians have no knowledge of such preparation, it is possible that Marcy had some other plant in mind.

Another well known desert plant, sotol *(Dasylirion wheeleri)* was utilized in much the same way as mescal. The crowns were gathered when the flowers were beginning to emerge, prepared in the same way as was mescal and baked for the same length of time. When baked they were removed from the pit, stripped, pounded to a pulp on a rock, and spread out to dry on "mescal cradles." The product was usually saved for winter, when it was eaten like a cake. Sotol crowns were not so desirable for food as those of mescal since they are rather hard and woody, only the youngest and most tender portions being edible.

Occasionally the emerging sotol flower stalks, as well as those of bear grass *(Nolina microcarpa)*, mescal *(Agave parryi)*, and amole *(Yucca glauca)*, were removed, placed on a bed of embers and roasted for about fifteen minutes, after which the outer charred portion was stripped off. The central edible portion was white, soft, sweet, and quite palatable and was regarded as the most delicious portion of the plant. These stalks might also be boiled or eaten raw. Just as the stalk came into bloom it was removed from the plant, peeled, cut into pieces and boiled. It was then dried and stored to be used as a vegetable.

Still another characteristic plant of portions of the American Southwest is the narrow-leaved soapweed or palmilla *(Yucca elata)*. The crowns of this species were gath-

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The crowns of this species were gathered any time from the middle of March to the end of summer, the portion of the stem from the ground to the leaves being peeled and baked overnight in an underground oven in a manner similar to that in which mescal was prepared. The yellow-to-brown baked product was known as *nigahe*. After being dried in the sun, broken into pieces, and softened in water the rather sweet product was ready to be eaten. The tender central leaves of the related datil *(Yucca baccata)* were cooked in soups, boiled with meat, and used in various similar combinations.

The large flowers of the narrow-leaved *Yucca elata* were also boiled and eaten as a vegetable, but the less palatable ones of the broad-leaved *Y. baccata* were eaten only if they could be obtained before the summer rain, since the Apache maintain that they are bitter thereafter.

The fruits of several species of Yucca were also utilized as food. The somewhat banana-shaped fruits of the datil *(Y. baccata)*, as well as of the palma *(Y. macrocarpa)* were gathered before they were fully ripe, laid on grass *(Andropogon furcatus)* on the ground, covered with the grass, and allowed to finish ripening in the sun. After roasting in hot ashes the hard black covering was stripped off, the fruit split lengthwise and the seeds removed. The white pulp was then ground and made into large cakes, which might be stored indefinitely. Frequently the roasted fruit was pounded to pulp on an animal hide and allowed to drain in a basket placed over a pan. The juice might be drunk or poured over and mixed with the cake pulp, making the latter soft and sticky as well as aiding in preserving it. In either case the pulp was spread on Yucca leaves to dry for two days in the sun, being always adorned with sunflower blossoms to "make it pretty." The Indians prayed while placing the sunflowers, the ceremonial significance being that the sunflower was used as a symbol of the fructifying influence of the sun, and this use constituted a prayer that the sun continue to make the yield plentiful year after year. The Mescalero Apache tell of a Yucca which grows near El Paso and has a "white" fruit and sweet sticky buds. They were

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263 picked, cut open, dried on sticks, and used in sweetening different foods.

262 [178] The fruits of various genera of cacti are still used as food but no longer constitute an important article of diet among these Apache. Formerly the Chiricahua Apache, [137] who ranged in western New Mexico, southeastern Arizona, and to the south in Old Mexico, utilized as food the fruit of the sahuaro or giant cactus *(Carnegiea gigantea)* and of the organ-pipe cactus or pitahaya dulce *(Lemaireocereus thurberi)*. Their name for it was *madaya*, an Apache corruption of pitahaya. [171] The gathering and utilization of these fruits by the Chiricahua Apache was not unlike that reported by Castetter and Underhill *(5:21)* for the Papago; the reader is referred to that paper for a discussion of the [184] subject. The Mescalero Apaches never have used these species as they do not grow within their present or past range.

252 262 [413] [824] [251] [824] The ripe fruit of a number of species of Opuntia, prickly pear cactus, was commonly utilized as food. The ripe fruits, or tunas, were removed with a pair of wooden tongs, made by doubling a pliable branch, and cleaned of spines with a brush of stiff stems of sacaton grass *(Sporobolus wrightii)* while held with the tongs. The fruit was then placed in burden baskets and taken home to be eaten fresh or dried and stored. To dry, the fruit was split lengthwise, freed of seeds, and placed on big blue stem grass *(Andropogon furcatus)* in the sun. Sun-dried fruit was usually boiled before eating, although soaking in water sometimes softened it [251] enough for use. Sometimes, after the seeds were removed, the fruit was mashed into a pulp and stored in this caked [953] form. Many of the Indians of the Southwest contend that these tunas or nopales must be eaten with discretion as too much of the fruit causes a fever; Bourke *(2:44)* corrobor- [222] ates this. The Chiricahua and Mescalero Apache women collected the tunas in large baskets carried on their backs, [482] suspended from a tumpline which rested on the upper part [251] of the chest. The split fruit was spread out to dry in the sun. Tunas formerly constituted a very important Apache food.

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food. The fruits of the hedgehog cactus *(Echinocereus coccineus)*, the salmon-flowered hedgehog *(E. lecanus)*, the desert strawberry *(E. fendleri)*, the golden spined strawberry *(E. chrysocentrus)*, and the rainbow cactus *(E. rigidissimus)* were gathered occasionally and eaten fresh. Several species of *Neomammillaria*, including the sunset cactus *(N. grahami)*, the snowball pincushion *(N. olivia)*, and the horned toad cactus *(N. mainae)* were at times eaten without preparation, although fruits of the sunset cactus were often dried and stored for winter use, when they were cooked before being eaten.

Mesquite *(Prosopis glandulosa)* is one of the most widespread and best known plants of the Southwest and its sweet, nutritious fruits have been and still are rather extensively used as a source of food. The beans of the mesquite were gathered, boiled, pounded on a hide or ground on a metate, the mixture placed in a pan and worked with the hands until it attained a thick consistency. Formerly the raw beans were ground on a metate into flour, at present a meat grinder is used for this purpose. In either case the seed coats were winnowed from the flour. The mesquite flour was usually made into bread as well as into a sort of pancake, which these Indians regarded as most delicious. Frequently the beans were cooked with meat, and the seed coats spit out as the combination was eaten. Gregg *(8:*102), evidently referring to these Apache of New Mexico, wrote that the mesquite pod was ground for flour with which to make their favorite pinole.

Occasionally the pods containing the seeds were boiled in water until the mixture turned red, after which the pods were taken out and mashed by hand, then put back in the container and boiled again until the water had been almost all boiled off. This constituted a sort of pudding.

Similarly the yellow fruits of the screw bean or tornillo *(Strombocarpa pubescens)* were extensively gathered, dried, and stored in sacks. The pods, which are somewhat sweeter than those of the mesquite, might be chewed and eaten raw as a delicacy but they were more commonly dried,

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252 262 washed, ground into flour, and made into a sort of bread. Both this and the mesquite bread are still extensively used by these Apache. This was also reported by Bourke *(2:*50) and by Standley *(28:*458).

252 251 262 137 In the fall of the year the pods of the New Mexican locust *(Robinia neomexicana)* were occasionally eaten raw. However, they were more often cooked, stored, and utilized similarly to those of the mesquite. The large clusters of pink flowers were gathered in late June, boiled, and eaten as a vegetable; or they might be stored in bags, and when wanted, re-cooked.

252 262 137 The Apache also utilized as food the small wild potato *(Solanum jamesii)*, common in the valleys, as well as *S. fendleri*, found usually in the mountains. The potatoes of the former species were usually gathered in August, while those of the latter species were not gathered until the end of September. They were boiled unpeeled and thus eaten. The *S. jamesii* product was sometimes dried, stored, and later ground into flour for making bread.

The tuberous, rather sweet, but tough roots of the Indian potato or *camote de raton (Hoffmanseggia densiflora)*, which were to be found growing only on the flats, were eaten either raw or cooked.

All species of oak, except one, go under the name *tcintcile; Quercus grisea* was known as *tcintcile donagogade*, "oak that never dies," and its acorns were used for food as were those of the Gambel oak *(Q. Gambelii)* although the fruits of the latter are not so sweet as those of the live oak and were, therefore, not as extensively used. In any event [251] the acorns were frequently gathered when ripe, roasted slightly, then pounded and mixed with dried meat or fat and the mixture stored away in hide containers. The fruit might also be eaten raw. Walnuts or nogales *(Juglans major)* ripened in September, when they were gathered, [251] pounded with clubs to remove the hulls and washed. The nut meats were often eaten raw, but were at times mixed with mesquite gravy or ground and combined with roasted mescal, and the mixture stored. The Warm Springs Apache

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(a Chiricahua band) at present prepare the meats by boiling in water. 252 262 137

The seeds of the piñon pine *(Pinus edulis)*, which ripened in October, were very extensively gathered for food before they fell from the tree. The "nuts" were either eaten raw or roasted for a few minutes in a pan so they would keep, then shelled. Often they were mixed with pulp from the fruits of yucca to make a pudding. When used raw they were ground, rolled into balls, and eaten as a sort of delicacy. These Apache did not permit their pregnant women to eat piñons, lest the child would be born with fat all over the body and make delivery difficult. [843] [845]

In times of food scarcity the seeds of the western yellow pine *(Pinus scopulorum)* were utilized but they never constituted an important article of diet on account of their small size. They were ground, the edible portion rolled into balls and eaten raw. Those of the limber or western white pine *(Pinus flexilis)* were larger and might be utilized but were likewise of little importance since the species was not abundant. Formerly the seeds were gathered before they began to fall, by shaking from the cones, but never before fully ripened. They were then roasted and hulled, or sometimes the seeds ground, shell and all, and eaten.

It might be well in this connection to mention the use of pine bark as a source of food by the Apache. The inner bark of *Pinus scopulorum* is quite sweet and palatable and has often been utilized as food, especially when other foods were not abundant. Portions of bark were stripped from the tree and the inner bark scraped off. Hrdlička *(12:22)* referred to it as being baked in the form of cakes. Formerly these Indians cut out large squares of bark with a long pointed stick and scraped off the inner bark with a smaller, sharpened piece of wood. It was usually boiled, or it might be chewed and eaten raw, but in this state it was rather difficult to digest. If boiled for a considerable period of time the sugar would crystallize out. The bark of large aspen trees *(Populus tremuloides)* was also utilized in the same [413]

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252 262 137 way. Children commonly ate the sweet bark of sumac *(Rhus cismontana)* as a delicacy.

263 222 137 Not unlike the above was the obtaining of sugar from the box elder maple *(Acer negundo)*. In olden times, before sugar was easily obtainable commercially, these Indians secured material for sweetening by boiling the inner bark, and outer portions of the wood just beneath the bark, until the sugar which it contained crystallized out. Also scrapings from the inner bark were dried and placed in the *xel* (parfleche) for winter use. Likewise sap from the New Mexico maple *(Acer neomexicana)* was collected and boiled to obtain syrup and sugar.

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252 262 137 A number of species of fruits were occasionally eaten but did not constitute important Apache foods. Among these were strawberries *(Fragaria bracteata)* and the purplish fruits of the wild privet *(Forestiera neomexicana)*, which were always eaten without preparation. Raspberries *(Rubus arizonicus)*, mulberries *(Morus microphylla)*, and hawthorne fruits *(Crataegus cerronis)* were either eaten fresh or pressed into pulpy cakes, dried, and stored for winter use.

[251]

Wild gooseberries and currants were quite commonly used. The purplish red fruits of the spiny-fruited gooseberry *(Ribes pinetorum)* has a pleasant acid flavor when ripe in September, at which time the spines may be easily brushed from the fruits. They were ground and compressed into cakes for winter consumption. Another gooseberry *(R. leptanthum)*, which has smooth fruits, somewhat larger than the former species, was eaten fresh or made into cakes for use during the winter. This species was the most eagerly sought because of the size of its fruits. The rather insipid fruits of two species of black currant, *Ribes wolfii* and *R. mescalerium*, were at times eaten without preparation by these Indians. Fruits of the former, in earlier times, were ground, dried, and pressed into cakes for storage, but are now used for jelly; those of the latter species, however, are usually cooked. Grapes *(Vitis arizonica)*, which grow

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in the mountains and ripen from July to September, were eaten fresh or might be dried and eaten like raisins.

Fruits of the one-seeded juniper *(Juniperus monosperma)* were commonly roasted in a pan over the open fire, a little water added, and when the whole became thick and white it was used as a gravy. The larger fruits of *J. pachyphloea* were eaten fresh when they ripened in July, at which time they were rather sweet. They might be roasted on heated stones and used either whole or ground. One informant reported that the "berries" are boiled and made into jellies or preserves, either in July or during the winter.

The white evening primrose *(Anogra albicaulis)*, as well as one or two other species of this genus, has podlike fruits that were occasionally chewed as a delicacy without preparation; the seeds might be ground and made into a sort of gravy or boiled in soups. The white seeds of the anglepod *(Vincetoxicum productum)*, which ripen and open in September, as well as the pods of *Maurandia wislizeni*, were eaten fresh or after being boiled. Children occasionally gathered pods of the evening primrose, *Galpinsia lavandulaefolia*, cooked, and ate them, but they were not an important article of food. The hard fruits of *Jamesia americana*, which also ripened in September, contained large seeds and were occasionally eaten fresh. Children commonly ate fresh ripe ground-cherries *(Physalis neomexicana)* as a delicacy. The Chiricahua Apache say that the seeds of the unicorn plant (probably *Martynia louisiana*) were eaten by the boys when these Indians were prisoners of war in Oklahoma.

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Several plants were utilied as chewing gum, the most common being the milkweed *(Asclepias speciosa)*. The "milk" was squezeed from the leaves and stems on a heavy black clay and the mixture chewed like ordinary gum. The resinous secretion from the trunk of the piñon pine *(Pinus edulis)* was also chewed, as well as the buds of the valley cottonwood *(Populus wislizeni)*.

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In this connection it may be noted that the Apache frequently made jelly from fruits such as algerita berries

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252 262 137 *(Berberis haematocarpa)*, which ripened in September, and elderberries *(Sambucus microbotrys)*. These were cooked with a sweet substance, strained, and allowed to jell. Rose hips *(Rosa fendleri)* were at times eaten fresh but more frequently the pulp was squeezed into water and boiled to make jelly, while black chokecherries *(Prunus melanocarpa)*, which ripened in August, were either eaten fresh or cooked to make a sort of preserve. Most commonly, however, the fruits were ground, pressed, and saved for winter, when the mass was cooked to make jelly. The Mescalero Apache have used these chokecherries for many years. The Chiricahua Apache called the fruit of this particular variety "bear's food" and did not eat them until they saw the Mescalero Apache do so. Another species of chokecherry *(Prunus* sp.) which grew in the Mescalero country was never eaten by the Apache, and most of these Indians were afraid to touch the fruits. The few who did occasionally eat them said they were intoxicating, and that the only way to counteract their effect was to eat fresh meat. The fruit of the hackberry, *Celtis reticulata*, which ripened late in September, was either eaten fresh or ground, caked, and dried for winter use. Sometimes jelly was made from it.

252 262 137 In common with many other groups of southwestern Indians these Apache utilized to a considerable degree the three-leaved sumac *(Rhus trilobata)*. The red fruits were gathered from midsummer to fall and dried in the sun. After grinding between flat stones the pulp was mixed with water and sugar and cooked. This jam was formerly commonly eaten with bread made of sunflower seeds and with prepared mescal. The fruits of *Rhus microphyllus* were similarly utilized.

Wild plants used as greens by the Apache, as well as other Indians of the Southwest, were red root or tumbleweed *(Amaranthus graecizans)*, purslane *(Portulaca oleracea)*, lamb's quarter, often called Indian spinach *(Chenopodium alba)*, leaves of pigweed *(Amaranthus retroflexus)*, the leaves of *Rumex occidentalis*, and osha or chuchupate *(Ligusticum porteri)*; all these are still utilized at the pres-

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ent time. They are not only eaten without preparation but are boiled and quite frequently cooked with meat or just the bones of animals, in combination with green chile and onions. Wood sorrel *(Oxalis violacea)* is often mixed with other leaves to be cooked or is eaten raw. The tops of fetid marigold *(Dysodia papposa)* and shepherd's purse *(Capsella bursa-pastoris)* are also used as greens, either cooked alone or with meat.

The young white rootstocks of cat-tail *(Typha latifolia)* were frequently gathered in the spring of the year and cooked with meat, as were the corm-like tubers of the sedge *(Cyperus fendlerianus)*. These were peeled and cooked or eaten raw. The Apache name for the last species, "feed to horse," was so given because the flowers and seeds were salted and fed to horses, and were said to be very fattening. The bulbs of wood-sorrel *(Oxalis violacea)* were eaten raw or, when abundant, were boiled. The raw fleshy roots of chimaja, also known as wild celery *(Cymopterus fendleri)*, were also utilized.

Leaves of dragon-head *(Dracocephalum parviflorum)*, the mint *(Mentha penardi)*, horsemint *(Monarda menthaefolia)*, and the pennyroyal *(Hedeoma nana)* were commonly used for flavoring. These Apache say that if they had no pepper this last named species was substituted in soups, but was not added until the soup had finished cooking. They also used the mint to keep water "cool," but probably meant that it made water more palatable to drink by imparting to it a cooling flavor. Hops *(Humulus lupulus neomexicanus)* were gathered in October, boiled, and used for flavoring in a considerable variety of ways. Formerly they were mixed with mesquite and screw bean flour (see p. 41) but at present they are mixed with wheat flour; they were also combined with wild potatoes to give flavor. More commonly they were used to flavor *tulbai*, the drink made from fermented maize. Wild onions *(Allium cernuum* and *A. geyeri)* flavored soups and gravy but were occasionally eaten raw. A sage, *Artemisia ludoviciana*, was also a flavoring substance for meat. A plant in very common use by vari-

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263 137 ous Indian groups of the Southwest was chimaja, also known as "wild celery" *(Cymopterus fendleri)*, and these Apache used the leaves for flavoring soups and meats. It was gathered when in flower or seed and had a mild flavor intermediate between that of celery and carrot. The leaves were used [262] in combination with other green plant parts and the roots [252] were eaten raw.

262 252 137 Seeds of many plants held an important place in the Apache diet, one of the more important ones being red root or tumbleweed *(Amaranthus graecizans)*. The inflorescences were pulled from the plant, threshed by rubbing between the hands, and the seeds winnowed and ground to make flour for bread. Other species of Amaranthus, especially *A. retroflexus*, the pigweed, were similarly utilized. Four species of grass—dropseed *(Sporobolus cryptandrus)*, *Muhlenbergia* sp., *Panicum bulbosum minor*, and grapevine mesquite grass *(Panicum obtusum)*—were also used for food, the seeds of the first three being threshed, winnowed, and ground into flour for bread. Seeds of the dropseed grass were boiled and eaten as porridge, while those of *Panicum obtusum*, as well as *Panicum bulbosum*, were ground to make gravy and mixed with meat. The small seeds of the shepherd's purse *(Capsella bursa-pastoris)* and fetid marigold *(Dysodia papposa)* were secured by cutting off the tops of the plants and beating them on a hide. Then [251] the seeds were winnowed in a basket tray in the wind. After drying they were stored and, when needed, ground into flour for bread. Sometimes the seeds were roasted without grinding and combined with other foods.

Ripe sunflower seeds *(Helianthus annuus* and *H. canus)* were gathered in the fall of the year by threshing. Those of the former species were also harvested when dead ripe, by women, who placed a basket under the plant and sharply struck the back of the sunflower head with a stick, knocking the seeds into the basket. They were sometimes ground and the flour used for a thick gravy, but more commonly this was sifted, made into dough, and baked on hot stones or in hot ashes. This kind of bread is still in common use. Cre-

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mony *(6:*296) reported the use of sunflower seeds among the Apache who ground them on a metate and made the resulting flour into cakes; Bourke *(2:*47) referred to the Apache and other Indian groups as having cultivated the sunflowers about 1870, the seeds of which were ground with corn into meal and made into cakes. Bourke's information that the Mescalero and Chiricahua Apache cultivated the sunflower is probably erroneous for these Indians are not known to have ever cultivated this plant. A jam made from the fruits of the three-leaved sumac *(Rhus trilobata)* was formerly extensively eaten with bread made from sunflower seeds. This jam is no longer in common use.

Seeds of other plants ground to make bread were notably false flax *(Camelina microcarpa)*, tansy mustard *(Sophia incisa)*, and the thistle *(Cirsium pallidum)*, none of which, however, were utilized extensively. The plants were threshed mechanically—false flax and thistle by shaking vigorously in the sack in which they were collected, tansy mustard by beating the pods with sticks. They were then winnowed, formerly in a hide because the seeds, especially those of false flax, would go through a burden basket, although a *tsa* (shallow basket) could be used. The flour from these species of seeds was made into dough and baked or the seeds might simply be boiled and eaten as were sunflower seeds.

The ripe pods of the vetch, *Vicia melilotoides*, as well as the wild pea, *Lathyrus leucanthus*, were cooked and eaten, or they might be dried and stored, to be soaked and boiled later.

BEVERAGES AND NARCOTICS

The most common and important drink among the Mescalero and Chiricahua Apache was *tulbai* (an Apache term meaning "water, grey" from the Apache *tu*—"water" and *bai* from *tibai*—"grey") One occasionally reads about the Apache using *tiswin*, also *twilt-kah-yee*. Cremony *(6:*245) wrote of an intoxicating beverage by the latter name, distributed freely by the Apache at their puberty